

Labor epidural analgesia with severe thrombocytopenia

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ABSTRACT

Thrombocytopenia in pregnancy could potentially lead to epidural hematoma and associated morbidity when neuraxial anesthesia is performed. We present a case of a 24-year-old parturient, who was otherwise healthy and without prior thrombocytopenia, who underwent epidural placement in the setting of undiagnosed severe thrombocytopenia. Her workup remained inconclusive, and the presumptive diagnosis of severe preeclampsia was made. She was given a platelet transfusion and underwent an uncomplicated spontaneous vaginal delivery. After recovery of her platelet count, the epidural catheter was safely removed approximately 60 hours after placement without any signs or symptoms of an epidural hematoma.

KEYWORDS Labor epidural; neuraxial; pregnancy; thrombocytopenia

Approximately 10% of women with uncomplicated pregnancies have a platelet count $<150,000/\text{mm}^3$ at the time of delivery.¹ The American Society of Anesthesiologists² and American College of Obstetricians and Gynecologists³ both recommend no routine checks for platelet counts in healthy women prior to insertion of an epidural catheter for labor analgesia. We report an encounter of severe thrombocytopenia with epidural labor analgesia.

CASE DESCRIPTION

A 24-year-old woman, gravida 2 and parity 0, at 40 weeks and 2 days gestation with uncomplicated prenatal care presented to labor and delivery triage with contractions. Cervical exam revealed dilation to 2 cm and effacement of 50%. She was admitted to the labor unit for observation, and a preanesthetic evaluation was completed within 30 minutes. She had no history suggestive of a bleeding disorder, even with her previous miscarriage. Her physical examination was unremarkable with normal blood pressure. Her platelet count 6 months prior was $202,000/\text{mm}^3$. At admission, the patient did not request epidural analgesia for labor. A complete blood cell count was drawn as part of the admission lab work, which revealed a platelet count of $32,000/\text{mm}^3$.

Due to a category II fetal heart rate tracing and cervical change to 3 cm, labor was augmented with oxytocin followed by amniotomy 5 hours after admission. Two hours later, the patient elected to receive epidural analgesia due to increasing pain. Given her negative medical and obstetric history, the anesthesia team did not check for lab values prior to proceeding. A 20-gauge soft epidural catheter was placed at the lumbar 3–4 level via a 17-gauge Tuohy needle in two attempts, using loss of resistance with air. The epidural space depth was obtained at 6 cm, and the catheter was secured at 11 cm at skin. Labor analgesia was initiated with an epidural injection of 10 mL of 0.1% ropivacaine and 100 mcg of fentanyl and maintained with a 0.1% ropivacaine–2 mcg/mL fentanyl solution delivered by a programmed intermittent epidural pump at 9 mL/50 min, with a 10 mL demand dose up to every 10 minutes.⁴ Initial analgesia was adequate, but 45 minutes later the patient complained of a one-sided block that persisted despite demand- and provider-administered boluses to the epidural catheter.

The low platelet value was incidentally discovered after shift change 1 hour after epidural placement. The epidural catheter was secured in place with extra tape. A repeat complete blood count was obtained at 1 and 3 hours after epidural placement, revealing platelet counts of $25,000$ and $21,000/\text{mm}^3$, respectively. The hematology service was consulted. At this time, urine analysis showed positive proteinuria. A diagnosis of severe preeclampsia was made, and a

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magnesium sulfate infusion was initiated. Other lab values including prothrombin time, partial thromboplastin time, international normalized ratio, D-dimer, fibrinogen, and liver enzymes were within normal limits. One unit of apheresis platelets was transfused as a precaution. Spontaneous vaginal delivery of a healthy 3800 g boy occurred 7 hours after epidural placement. There was a first-degree tear of the perineum requiring minor repair. Her blood loss was 750 mL due to uterine atony.

The epidural was secured and kept in place postpartum. Further workup revealed no sickle cells or schistocytes, as well as normal lactate dehydrogenase and haptoglobin levels. She was continued on a magnesium sulfate infusion for 24 hours for the presumptive diagnosis of severe preeclampsia. She was monitored with neurologic checks every 2 hours, and a complete blood count was drawn every 6 hours. As immune thrombocytopenia purpura in pregnancy remained a possibility, she was given 20 mg of dexamethasone approximately 24 hours postpartum.

Her platelet count ranged from 50,000 to 60,000/mm³ postpartum and finally reached 81,000/mm³ 60 hours after epidural placement. The epidural catheter was removed without any complications. The catheter site was dry and there were no neurologic symptoms before or after the epidural catheter removal. She continued to recover and was discharged home on postpartum day 3.

DISCUSSION

While the American Society of Anesthesiologists and American College of Obstetricians and Gynecologists recommend no routine platelet counts in healthy women, preeclampsia may occur with mild or no symptoms. At times, the choice whether to perform neuraxial analgesia/anesthesia when there is no time to obtain a platelet count is made as an individualized decision. In our case, while the lab value was not available at the time of preanesthetic evaluation, a review of lab values immediately before epidural placement would have avoided the situation described. Furthermore, our encounter also supports the estimate by Lee et al that

even with a platelet count <50,000/mm³, the risk of an epidural hematoma remains low at 0% to 11%.⁵ There have been a handful of reports of uneventful epidural analgesia in the setting of severe thrombocytopenia.^{6–8} In our case, epidural placement was performed at 32,000/mm³, but the lowest platelet count during her labor course was 21,000/mm³. Our report may contribute to the scant evidence currently available regarding the risk of epidural hematoma with insertion and removal of the epidural catheter in extreme thrombocytopenia.

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